

# TEAC

## SERVICE MANUAL

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# A-H400

## Integrated Stereo Amplifier

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### NOTES

- PC boards shown are viewed from parts side.
- The parts with no reference number or no parts number in the exploded views are not supplied.
- As regards the resistors and capacitors, refer to the circuit diagrams contained in this manual.
- $\triangle$  Parts marked with this sign are safety critical components. They must be replaced with identical components- refer to the appropriate parts list and ensure exact replacement.
- Parts of [ ] mark can be used only with the version designated.  
[J] : JAPAN [US] : U.S.A. [C] : CANADA  
[E] : EUROPE [UK] : U.K. [GE] : GENERAL EXPORT

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## Specifications

### AMP Section

|                              |                                 |
|------------------------------|---------------------------------|
| Power output                 | : 40W + 40W<br>(8Ω, 1kHz, 0.3%) |
| Total harmonic distortion    | : 0.05%<br>(40W, 1kHz, 8Ω)      |
| S/N Ratio (input Short)      |                                 |
| Phono                        | : 65dB (IHF-A)                  |
| CD, Tuner, Aux, Tape         | : 90dB (IHF-A)                  |
| Input Sensitivity/ Impedance |                                 |
| Phono(MM)                    | : 2.5mV/47KΩ                    |
| CD, Tuner, Aux, Tape         | : 200mV/47KΩ                    |
| Maximum Input level          |                                 |
| Phono                        | : 45mV                          |
| CD, Tuner, Aux, Tape         | : 4.5V                          |
| Channel Separation           | : 56dB                          |
| (Input Short)                | (1kHz, 1W, B.P.F)               |
| Residual noise               | : 0.6mV                         |
| Frequency response           | : 5Hz to 85kHz                  |
| Tone control                 |                                 |
| Bass                         | : ± 10dB (100Hz)                |
| Treble                       | : ± 10dB (10KHz)                |
| Required speaker impedance   | : 8Ω to 16Ω                     |

### General

|                    |                      |
|--------------------|----------------------|
| Power Requirements | : 230V AC, 50Hz[EUR] |
| Power Consumption  | : 100W[EUR]          |
| Dimensions (W×H×D) | : 285×131×352mm      |
| Weight(net)        | : 6kg                |

### Standard accessories

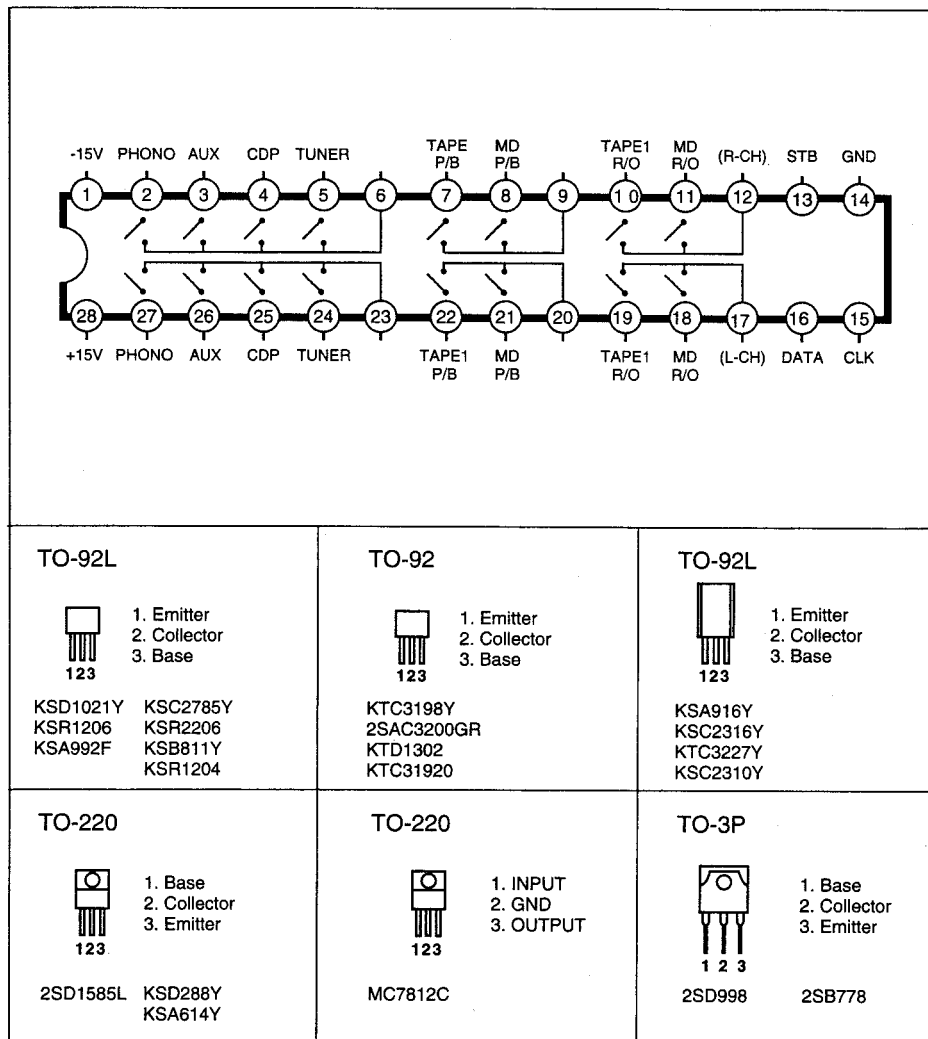
|                     |     |
|---------------------|-----|
| Remote Control unit | : 1 |
| Operator's manual   | : 1 |

- Improvements may result in specifications and features changing without notice.
- Illustrations may differ slightly from production models.

# IC FUNCTION (MI-COM BVIANAM 1243M,BVITMP78PM78F)

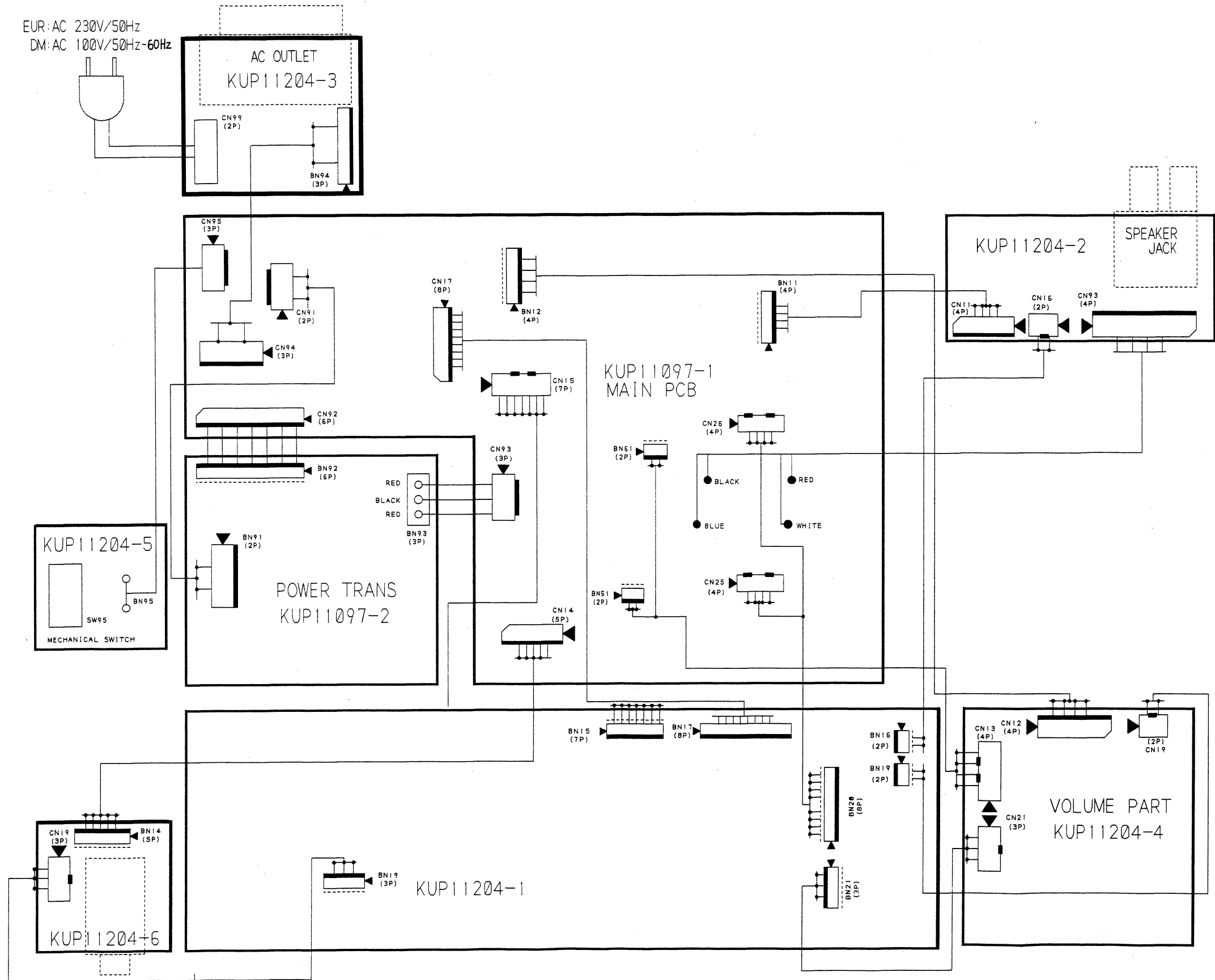
| PIN NO. | SYMBOL          | I/O | DESCRIPTION                         |
|---------|-----------------|-----|-------------------------------------|
| 1       | Vdd             | I   | +5V                                 |
| 2       | NC              |     | No Connection                       |
| 3       | Func, Mute      | O   | Function Mute ON/OFF Output         |
| 4       | NC              |     | No Connection                       |
| 5       | Tuner-Mute      | O   | Tuner Mute Output                   |
| 6       | Stereo/Mono     | O   | Stereo/Mono Switching Output        |
| 7~9     | Func, Indicator | O   | Function LED Drive Data Output      |
| 10      | NC              |     | No Connection                       |
| 11      | RDS-DATA        | I   | RDS DATA Output                     |
| 12      | FM-L            | I   | FM/AM Switching Output              |
| 13      | RDS-CLK         | I   | RDS CLOCK input                     |
| 14      | Stereo-IN       | I   | Stereo Display input                |
| 15      | Tuned-IN        | I   | Tuned Display input                 |
| 16      | Protect-IN      | I   | Protection input                    |
| 17~21   | Key Input       | I   | Resistor Divide Key Control Input   |
| 22      | Vss             |     | GND                                 |
| 23      | Vass            |     | GND                                 |
| 24      | Varef           |     | Vdd(+5)                             |
| 25      | Vdd             |     | +5V                                 |
| 26      | Back-up         | I   | Backup Mode Control                 |
| 27      | Vss             |     | GND                                 |
| 28~29   | Func. Up/Down   | I   | Function UP/DOWN Input              |
| 30      | Vss             |     | GND                                 |
| 31      | XIN             | I   | Crystal element Connection Terminal |
| 32      | XOUT            | O   | Crystal element Connection Terminal |
| 33      | RESET           | I   | RESET Input                         |
| 34      | Remote-In       | I   | Remote Control Input                |
| 35      | BUS OUT         | O   | System Control Output               |
| 36      | BUS IN          | I   | System Control Signal Input         |
| 37      | SPK ON/OFF      | O   | Speaker ON/OFF Output               |
| 38      | NC              |     | NO Connection                       |
| 39      | -20dB Mute      | O   | -20dB Mute Output                   |
| 40      | NC              |     | No Connection                       |
| 41      | PLL CE          | O   | PLL Serial Chip Enable Output       |
| 42      | PLL DATA        | O   | PLL Serial Data Output              |
| 43      | PLL CLK         | O   | PLL Serial CLOCK Output             |
| 44      | Option          | O   | Amp/Receiver Option                 |
| 45      | NC              |     | No Connectio                        |
| 46      | STB             | O   | Function IC Signal Output           |
| 47      | DATA            | O   | Function IC Signal Output           |
| 48      | CLK             | O   | Function IC Signal Output           |
| 49      | NC              |     | No Connection                       |
| 50      | Vkk             |     | FIP Voltage Output                  |
| 51~61   | FIP GRID        | O   | FIP GRID Output                     |
| 62~82   | FIP ANODE       | O   | FIP ANODE Output                    |
| 83~85   | Option          | O   | Region Option                       |
| 86      | Option          | O   | Display Option                      |
| 87      | RDS             | O   | RDS ON/OFF Option                   |
| 88      | Model Option    | O   | Model Option                        |
| 89      | Standby         | O   | Standby/Direct Option Output        |
| 90      | VOL UP          | O   | VOL UP                              |
| 91      | VOL DOWN        | O   | VOL DOWN                            |
| 92      | VOL LED         | O   | VOL LED Display                     |
| 93      | Power ON/OFF    | O   | Power ON/OFF Output                 |
| 94      | Standby LED     | O   | Standby LED ON/OFF Ouput            |
| 95~100  | NC              |     | No Connection                       |

# IC BLOCK DIAGRAM

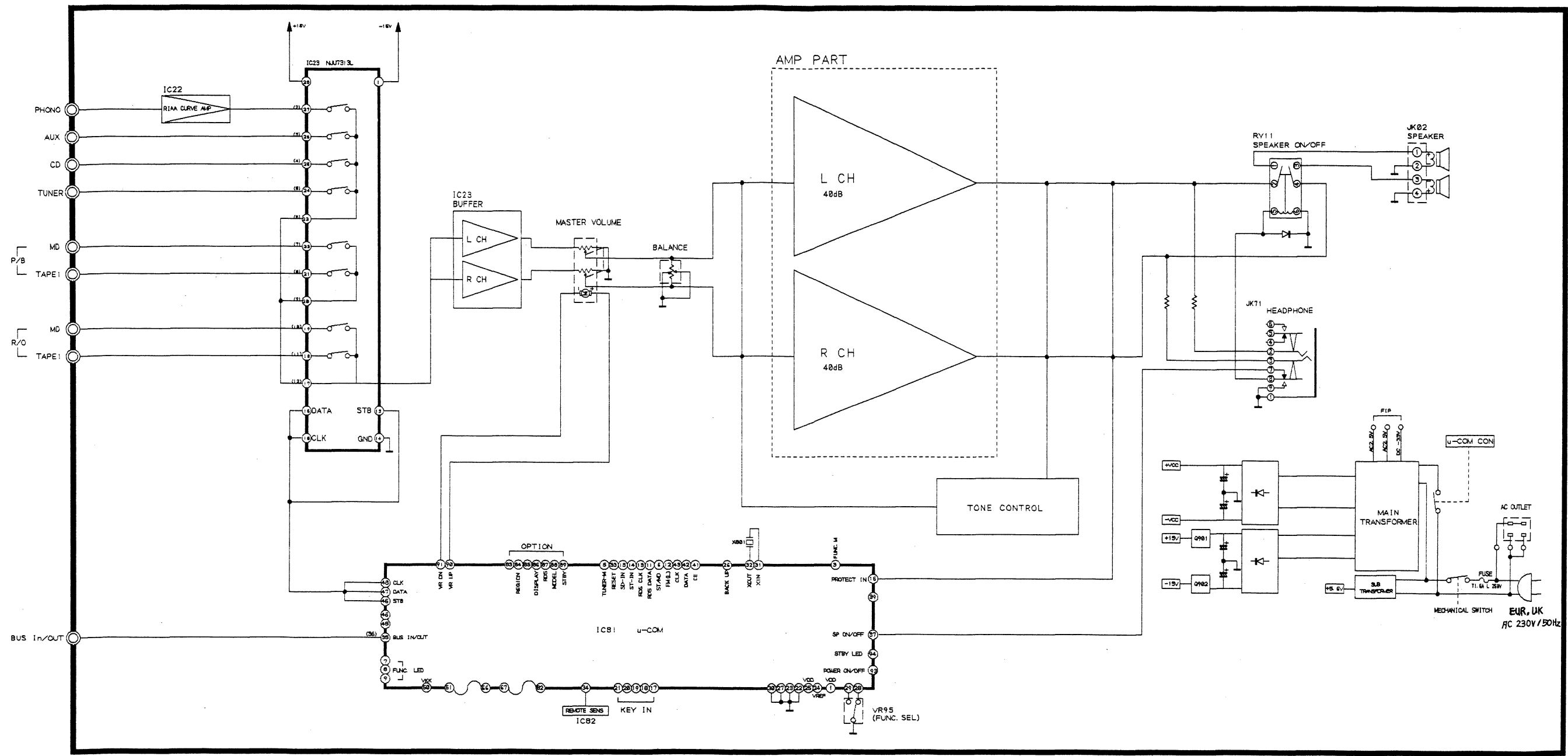




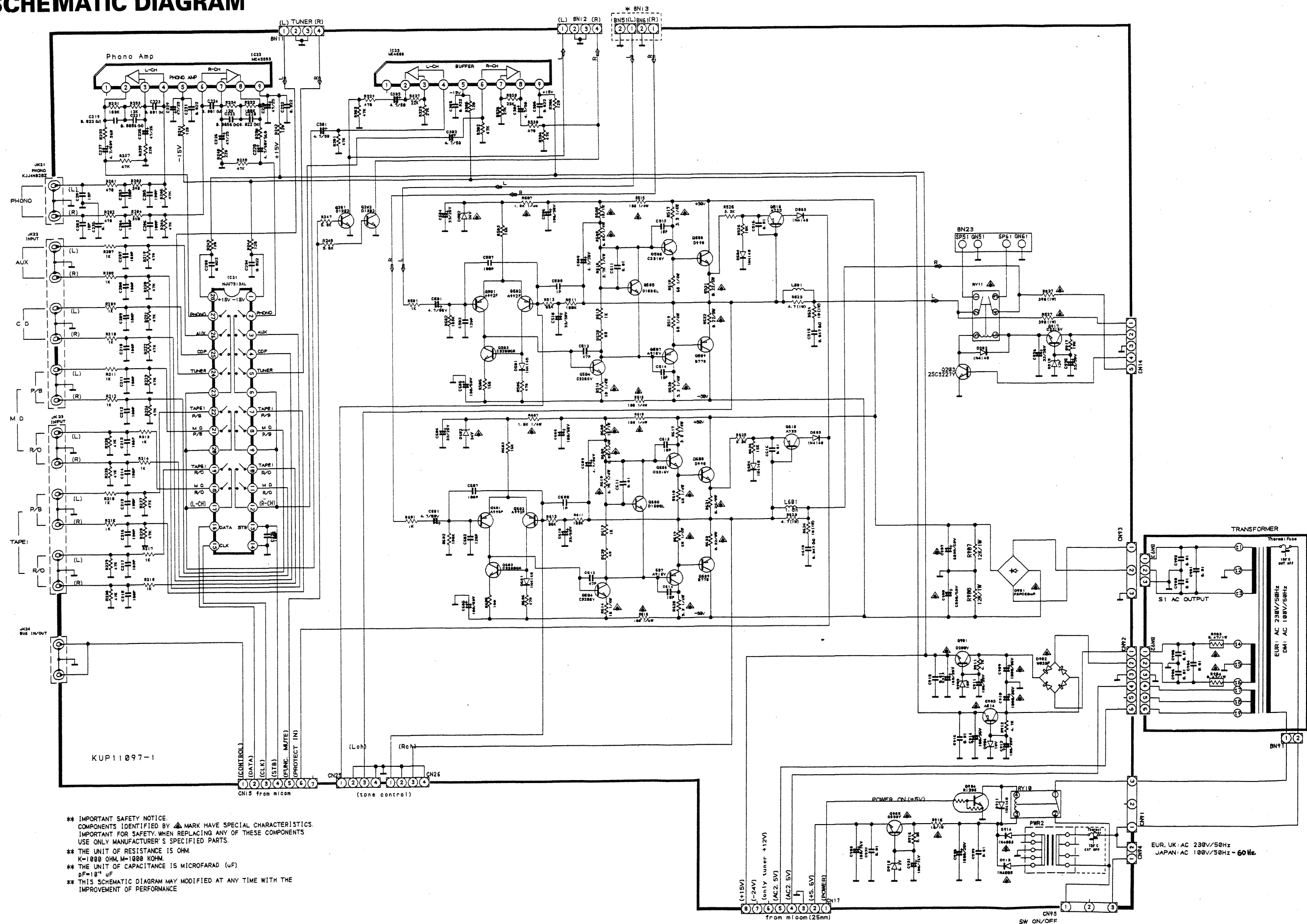
# WIRING DIAGRAM



**BLOCK DIAGRAM**



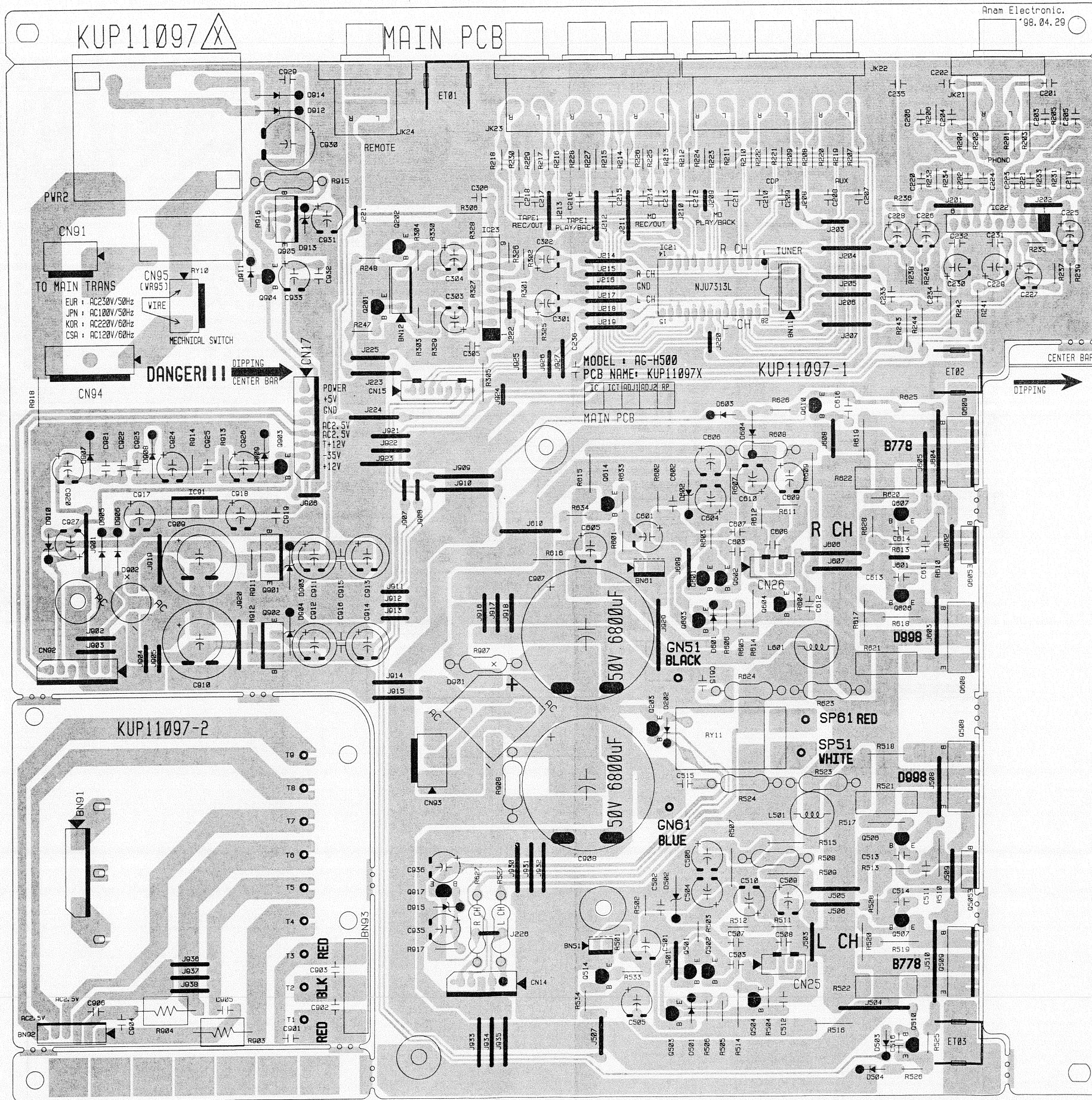
# SCHEMATIC DIAGRAM







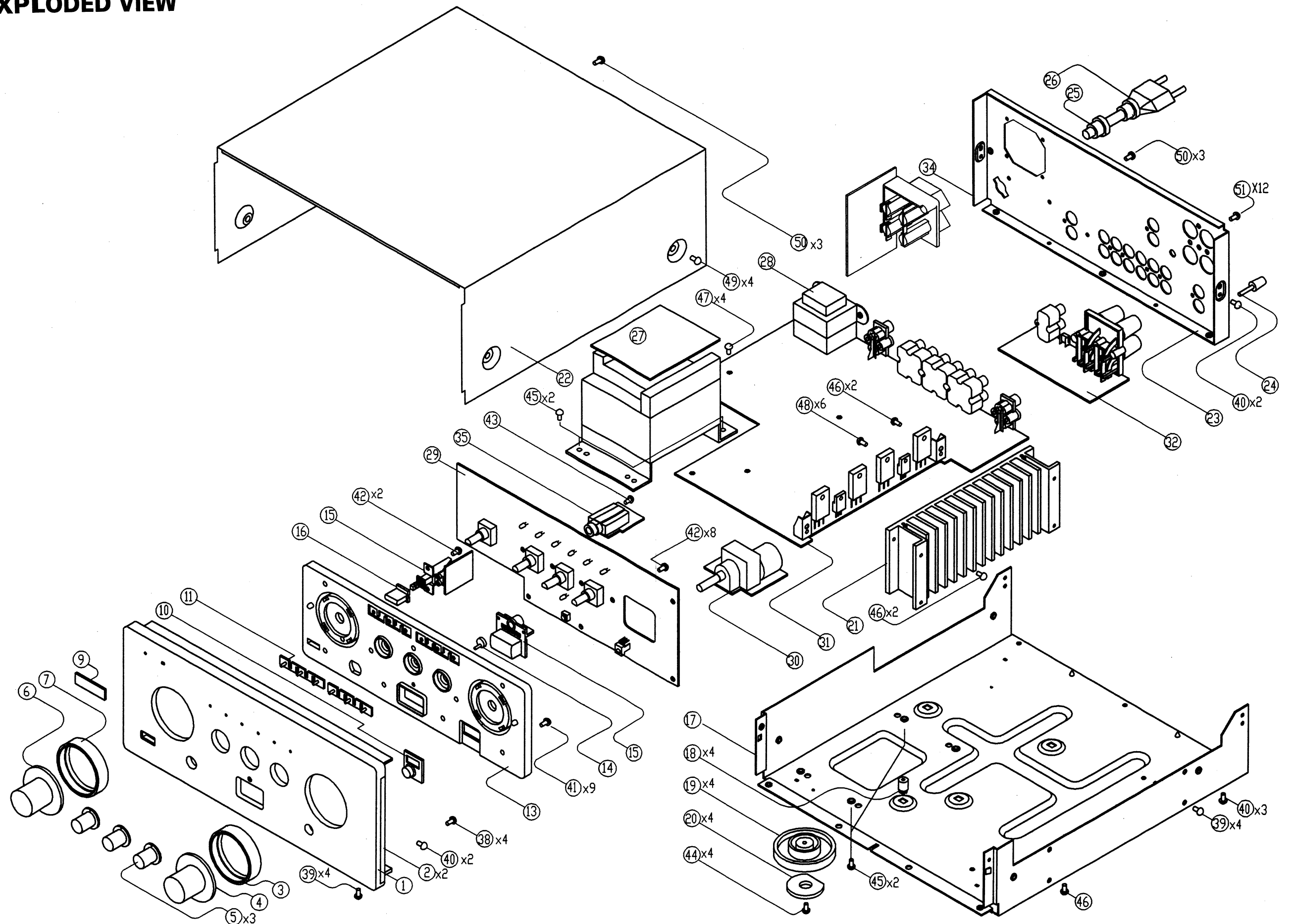
## PRINTED CIRCUIT BOARDS







## EXPLODED VIEW



EXPLODED VIEW

| REF. NO. | PARTS NO.    | DESCRIPTION               | REMARKS      |
|----------|--------------|---------------------------|--------------|
| 1        | 9A07341900   | PANEL , AL                | KKM1A078ZC11 |
| 2        | 9A06677600   | SIDE BAR                  | KKM1A062C11  |
| 3        | 9A06697200   | HOUSING,VOLUME A4-96-2578 | KGX1A240C12  |
| 4        | 9A06905800   | VOLUME CAP ASS'Y          | KGX1A238XA   |
| 5        | 9A06228400   | VOLUME CAP ASS'Y (C)      | KGX1A218ZA   |
| 6        | 9A06905900   | VOLUME CAP ASS'Y          | KGX1A238YA   |
| 7        | 9A06906200   | HOUSING,VOLUME            | KGX2A240C12  |
| 8        |              | VACANT                    |              |
| 9        | 9A06224200   | BADGE,TEAC                | BGB1A047     |
| 10       | 9A06863500   | WINDOW,SENSOR             | KGU2A155     |
| 11       | 9A06905500   | INDICATOR                 | KGL1A134     |
| 12       | 9A06904600   | KNOB, TACT                | KBT1A485ZK64 |
| 13       | 9A07341400   | PANEL , MOLD              | KGW1A243ZK64 |
| 14       | 9A07301300   | INDICATOR,POWER           | KGL2A120     |
| 15       | 9A07341200   | KNOB , TACT               | KBT1A599ZK64 |
| 16       | 9A07341100   | KNOB , POWER              | KBC1A113ZK64 |
| 17       | 9A06908600   | CHASSIS , BOTTOM          | KUA1A156     |
| 18       | 9A06229100   | MOUNT , PCB A4-92-1728    | KHE1A023     |
| 19       | 9A06315500   | FOOT                      | KKL1A047ZK63 |
| 20       | 9A06229300   | CUSHION , FOOT            | KHG1A039Z    |
| 21       | 9A06907500   | SINK , HEAT               | KMY1A125     |
| 22       | 9A06678600   | TOP CABINET               | KKC1B082S21  |
| 23       | 9A07341800   | PANEL , REAR              | KKF5A151RK59 |
| 24       | 9A05917200   | GROUND TERMINAL           | KMA2A001     |
| 25       | △ 9A01376900 | BUSHING,AC CORD HEYCO(SR- | KHR129       |
| 26       | △ 9A05328100 | CORD,POWER                | KJA2B019Z    |
| 27       | △ 9A06907200 | TRANS , POWER             | KL75S001ZE   |
| 28       | 9A06675500   | TRANS SUB                 | KL75J024ZE   |
| 29       |              | FRONT PCB                 |              |
| 30       | 9A06237000   | VOLUME, MOTOR RK6312MC282 | KVV9A08A503Z |
| 31       | 9A07342000   | MAIN PCB ASS'Y            | KOP11097G    |
| 32       |              | HEADPHONE PCB             |              |
| 33       |              | VACANT                    |              |
| 34       |              | OUTLET PCB                |              |
| 35       |              | HEADPHONE PCB             |              |
| 36       |              | VACANT                    |              |
| 37       |              | VACANT                    |              |
| 38       | 9A06229000   | SCREW , SPECIAL           | KHD1A016     |
| 39       | 9A01397400   | SCREW KTS3+8J             | KTS3+8J      |
| 40       | 9A01532600   | SCREW KTB3+6J             | KTB3+6J      |
| 41       | 9A06234700   | SCREW KTW3+6F             | KTW3+6F      |
| 42       | 9A01377400   | SCREW,KTB3+10G            | KTB3+10G     |
| 43       | 9A01377400   | SCREW,KTB3+10G            | KTB3+10G     |
| 44       | 9A05339200   | SCREW KTW3+8J             | KTW3+8J      |
| 45       | 9A01477800   | SCREW,KTB4+8F             | KTB4+8F      |
| 46       | 9A01535800   | SCREW,KTB3+8J             | KTB3+8J      |
| 47       | 9A06679700   | SCREW,KTB3+14J            | KTB3+14J     |
| 48       | 9A01377500   | SCREW,KTB3+12J            | KTB3+12J     |
| 49       | 9A05984300   | SCREW,KTB4+6FFZ           | KTB4+6FFZ    |
| 50       | 9A01377200   | SCREW KTB3+8JFZ           | KTB3+8JFZ    |
| 51       | 9A01377300   | SCREW,KTB3+10GFZ          | KTB3+10GFZ   |
| △        | 9A05353400   | FUSE,F1.6A                | KBA2C1600TLE |

INCLUDED ACCESSORIES

| REF. NO. | PARTS NO.  | DESCRIPTION                     | REMARKS       |
|----------|------------|---------------------------------|---------------|
|          | 9A07124800 | OWNER'S MANUAL E/F/G/I/S A-H400 | KQX1A479Z     |
|          | 9A07322200 | SUPLEMENTE (E/F/G/I/S) A-H500I  | KQE1A113Z     |
|          | 9A07364020 | REMOCON XMTR ASS'Y (RC-711)     | KARTAH500IEUR |

■ Resistor and Capacitor

- Notes : · Part numbers are indicated for most mechanical parts.  
Please use this part number for parts order.
- IMPORTANT SAFETY NOTICE.  
Components identified by △ mark have special characteristics important for safety.  
When replacing any of these components, use only manufacture's specified parts.
- The unit of resistance is OHM( Ω )  
K=1000( Ω ), M=1000(K Ω )
- The unit of capacitance is MICROFARAD( μF ).  
P=10<sup>-6</sup> μF

■ Numbering System of Resistor

Example

|      |         |       |           |       |
|------|---------|-------|-----------|-------|
| KRD  | 25      | F     | J         | 101   |
| Type | Wattage | Shape | Tolerance | Value |

| Resistor Type    | Wattage | Tolerance |
|------------------|---------|-----------|
| KRD:Carbon       | 20:1/5W | F:= ± 1%  |
| KRG:Metal Oxide  | 25:1/4W | J:= ± 5%  |
|                  | 50:1/2W | K:= ± 10% |
|                  | 1:1W    |           |
| KRF:Metal Cement | 2:2W    |           |
|                  | 3:3W    |           |

■ Numbering System of Capacitor

Example

|      |         |       |           |             |
|------|---------|-------|-----------|-------------|
| KCKT | 1H      | 101   | K         | B           |
| Type | Voltage | Value | Tolerance | Peculiarity |

| Capacitor Type      | Voltage   |            | Tolerance      |
|---------------------|-----------|------------|----------------|
|                     | ECEA Type | Other      |                |
| KCB: Ceramic        | OJ:6.3V   | 1H:50V DC  | C: ± 0.25pF    |
| KCC: Ceramic        | 1A:10V    | 1:125V DC  | G: ± 2%        |
| KCK: Ceramic        | 1C:16V    | KC:400V AC | J: ± 5%        |
| KCFR: Semiconductor | 1E:25V    |            | K: ± 10%       |
| KCQI: Polyester     | 1H:50V    |            | Z: + 80%, -20% |
| KCQP: Polypropylene | 1V:35V    |            |                |
| KCQS: Polystyrol    |           |            |                |



## MAIN PCB ASS'Y

| REF. NO. | PARTS NO.    | DESCRIPTION               | REMARKS       |
|----------|--------------|---------------------------|---------------|
|          | 9A07342000   | MAIN PCB ASS'Y            | KOP11097G     |
|          | 9A07342500   | PCB , MAIN                | KUP11097X     |
| C907.908 | △ 9A06905000 | CAP , ELECT               | KCET50VAH682N |
| C909.910 | △ 9A06904900 | ELECT,CAP(1000UF/35V AHS) | KCEA1VAHS102E |
| C930     | △ 9A06226700 | CE, 1000UF H 25V DC       | KCEA1EH102E   |
| D202.501 | 9A01390500   | DIODE,1N4148MT            | KVD1N4148MT   |
| D502.602 | △ 9A06256300 | DIODE , ZENER UZ24BMT     | KVDU24BMT     |
| D503.504 | 9A01390500   | DIODE,1N4148MT            | KVD1N4148MT   |
| D601.603 | 9A01390500   | DIODE,1N4148MT            | KVD1N4148MT   |
| D604     | 9A01390600   | DIODE,1N4148T             | KVD1N4148T    |
| D901     | △ 9A05353100 | DIODE , BRIDGE PBPC604F   | BVDPBPC604F   |
| D902     | △ 9A05987000 | DIODE,BRIDGE W02GF        | BVDW02GF      |
| D903.904 | △ 9A05970800 | DIODE,UZ16BMT             | KVDU216BMT    |
| D911     | 9A01390500   | DIODE,1N4148MT            | KVD1N4148MT   |
| D912.914 | 9A05194700   | DIODE,1N4003ST            | KVD1N4003ST   |
| D913     | △ 9A06236200 | DIODE,ZENER MTZJ6.2BT     | KVDMTZJ6.2BT  |
| D915     | △ 9A05359600 | DIODE,ZENER MTZJ12BT      | KVDMTZJ12BT   |
| IC21     | 9A06761700   | IC, NJU7313L              | BVINJU7313L   |
| IC22.23  | 9A05195800   | IC,MC4558S                | KVIMC4558S    |
| JK21     | 9A06906500   | JACK , INPUT              | KJJ4N028Z     |
| JK22.23  | 9A06674900   | JACK,BOARD 4R014Z         | KJJ4R014Z     |
| JK24     | 9A06906600   | JACK , REMOTER            | KJJ4N030Z     |
| L501.601 | 9A04875100   | COIL,                     | KLEYK1R8KA    |
| PW2      | △ 9A06675500 | TRANS SUB                 | KLTSJ024ZE    |
| Q201.202 | 9A05197500   | TR,KTD1302T               | KVTKTD1302T   |
| Q203     | 9A05196900   | TR,KSR1206TA              | KVTKSR1206T   |
| Q203     | 9A05939600   | TR.,KTC3227Y              | KVTKTC3227YT  |
| Q501.502 | 9A05341600   | TR,KSA992-FTA             | KVTKSA992FT   |
| Q503.603 | 9A06236700   | TR,KTC3200GRT             | KVTKTC3200GRT |
| Q504.604 | 9A07363800   | TR,KSC2310YT              | KVTKSC2310YT  |
| Q505.605 | 9A05977200   | TR.,2SD1585               | BVT2SD1585L   |
| Q506.606 | 9A05196800   | TR,KSC2316-Y-SHTA         | KVTKSC2316YT  |
| Q507.607 | 9A05196700   | TR,KSA916-Y-SHTA          | KVTKSA916YT   |
| Q508.608 | 9A05359800   | TR, KTD9980               | KVTKTD9980    |
| Q509.609 | 9A05359700   | TR, KTB7780               | KVTKTB7780    |
| Q510.610 | 9A01387400   | TR,KSA733CYT              | KVTKSA733CYT  |
| Q601.602 | 9A05341600   | TR,KSA992-FTA             | KVTKSA992FT   |
| Q901.905 | △ 9A01388300 | TR,KSD288-Y-AB            | KVTKSD288Y    |
| Q902     | △ 9A01388400 | TR,KSA614-Y               | KVTKSA614Y    |
| Q904     | 9A05196900   | TR,KSR1206TA              | KVTKSR1206T   |
| Q917     | 9A05196800   | TR,KSC2316-Y-SHTA         | KVTKSC2316YT  |
| R508.608 | △ 9A06908200 | RES , METAL OXIDE FILM    | KRG1ANJ102H   |
| R521.522 | △ 9A05896300 | R,0.22-OHM,5W             | KRF5EKR22H    |
| R523.623 | △ 9A05896400 | R,4.7-OHM,1W              | KRG1ANJ4R7H   |
| R524.624 | △ 9A05338000 | R,METAL OXIDE FILM 1W 10  | KRG1ANJ100H   |
| R527.627 | △ 9A05338200 | R,METAL OXIDE FILM 1W 390 | KRG1ANJ391H   |
| R621.622 | △ 9A05896300 | R,0.22-OHM,5W             | KRF5EKR22H    |
| R903.904 | △ 9A05897200 | RES,FUSE 0.47-OHM,1W      | KRQ1CJR47     |
| R907.908 | △ 9A06908300 | RES , METAL OXIDE FILM    | KRG1ANJ123H   |
| R915     | △ 9A05338000 | R,METAL OXIDE FILM 1W 10  | KRG1ANJ100H   |
| RY10     | △ 9A05987100 | RELAY HR-CR7-DC12V        | KSL1A007ZE    |
| RY11     | △ 9A04879000 | RELAY,OSA-SS-212DM3       | BSL4A004ZU    |

## SUB PCB ASS'Y

| REF. NO. | PARTS NO.    | DESCRIPTION               | REMARKS         |
|----------|--------------|---------------------------|-----------------|
|          | 9A07342100   | SUB PCB ASS'Y             | KOP11204B       |
|          | 9A07342600   | PCB , SUB                 | KUP11204Z       |
| D804     | 9A05195000   | LED,RED SLR342VCF02       | KVD342VCF02T085 |
| D805.807 | 9A01390500   | DIODE,1N4148MT            | KVD1N4148MT     |
| D810-815 | 9A05890300   | LED,YELLOW SLR342YCF02    | KVD342YCF02T085 |
| D816     | 9A06765300   | DIODE,MTZJ5.6BT           | KVDMTZJ5.6BT    |
| F901     | 9A05328200   | HOLDER,FUSE KJCF5S        | KJCF5S          |
| IC81     | 9A06786000   | IC, TMP87PM78F            | BVITMP87PM78F   |
| IC82     | 9A06757900   | IC,PNA4612M00HB           | BRVPNA4612M00HB |
| IC84     | 9A06904500   | IC, 74HC138D              | BVI74HC138D     |
| JK01     | 9A05316900   | JACK HTJ064-05BG          | BJJ2E017Z       |
| JK02     | 9A06677000   | TERMINAL SP               | KJJ5P011Z       |
| JK11     | 9A07363700   | JACK,BOARD                | KJJ4N045Z       |
| OL11     | △ 9A05895700 | OUTLET,AC                 | BJJ7A003Z       |
| Q803.804 | 9A03745200   | TR,KSR2206TA              | KVTKSR2206T     |
| Q805.806 | 9A03747300   | TR,KSB811-YTA             | KVTKSB811YT     |
| Q807.808 | 9A03811700   | TR,KSD1021-YTA            | KVTKSD1021YT    |
| Q809     | 9A03745200   | TR,KSR2206TA              | KVTKSR2206T     |
| Q810     | 9A05196900   | TR,KSR1206TA              | KVTKSR1206T     |
| Q811     | 9A03747300   | TR,KSB811-YTA             | KVTKSB811YT     |
| Q812.813 | 9A05196900   | TR,KSR1206TA              | KVTKSR1206T     |
| Q814     | 9A05196800   | TR,KSC2316-Y-SHTA         | KVTKSC2316YT    |
| S101     | 9A04882400   | SW,TACT                   | KST1A010Z       |
| S824     | 9A06671200   | SW.TACT EVQ21505R         | BST1A014ZT      |
| SW95     | △ 9A06784700 | SW, PUSH (MOMS)           | KSH1A001ZV      |
| VR92.93  | 9A06673000   | RES,VARIABLE              | BVV2X02C104Y    |
| VR94     | 9A06673100   | RES,VARIABLE 03B104Y      | BVV2X03B104Y    |
| VR95     | 9A06224700   | VR , ENCODOR EC16B1210    | BSR2A006Z       |
| VR96     | 9A06237000   | VOLUME, MOTOR RK6312MC282 | KVV9A08A503Z    |
| X801     | 9A05193000   | CRYSTAL, 08000E160C       | KOX08000E160C   |
| Z101     | 9A05337900   | R,NETWORK SN8X103J        | KRGSN8X103J     |